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Palestinian Preferences And Attitudes Towards COVID-19 Vaccination

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Abstract

The study aims at investigating Palestinian preferences and attitudes toward COVID-19 vaccination. The study approached the literature as a multi-dimensional phenomenon, which addressed both theoretical and applied research. The study adopted the quantitative research approach using the sampling survey method. The questionnaire is appropriate for the exploratory nature of the research. Three hundred eighty-four Palestinians over fifteen years of age were stratifiedly selected, based on gender and region. The sample population consists of Palestinians living in both Hebron and Bethlehem Governorates at the time of the survey. An index of a 25-item scale was used to measure Palestinian preferences and attitudes towards COVID-19 vaccination that was developed by the research team. The survey was conducted through face-to-face interviews in Hebron and Bethlehem Governorates, in the West Bank during 2021. The sample size was calculated using the sampling web, http://www.surveysystem.com/sscalc.htm, sample size calculator, with a margin error of 0.05. The collected data was statistically analyzed using the statistical package for social sciences (SPSS). The study findings showed that the mean score of preferences and attitudes towards COVID-19 vaccination scale as reported by the sample of three hundred eighty-four participants was moderate. Findings revealed the indicators of preferences and attitudes towards COVID-19 vaccination ranked in a descending order as follows, “It is necessary to inform citizens of the importance of Covid-19 vaccination”; “The vaccination against Covid-19 virus should be approached carefully”. “Covid-19 vaccination is a national duty”; “Covid-19 vaccination is better than nothing”, and “Covid-19 vaccination is the responsibility of every citizen”. Additionally, Palestinians indicated that they will not hesitate in taking the available Covid-19 vaccines; they encourage their families and friends to get the Covid-19 vaccination; and they give the needed attention to the topic of Covid-19 vaccination; believing that Covid-19 vaccination is an urgent demand; although some people behave illogically when addressing Covid-19 vaccination. Findings showed that gender, place of residency, qualification, and religious commitment do not show any significant differences. However, it was found that work status, corona virus infection, marital status, and age were significant variables.

Keywords: Preferences, attitudes, COVID-19, vaccination, Palestine.

1. Introduction

Coronavirus 2019 (COVID-19) is a new, severe, acute respiratory coronavirus infection (Wang et al., 2020). It was identified in late December 2019 in Wuhan, Hubei Province, China, and quickly spread over the world two months later (World Health Organization [WHO], 2020). The clinical presentation is that of a respiratory infection, with symptoms ranging from a mild common cold-like illness to a severe viral pneumonia that can progress to a potentially deadly acute respiratory distress syndrome (WHO, 2020a).

COVID-19 is spread swiftly by droplets generated when a person coughs or sneezes among people in close contact (Ali *et al.,* 2020). On January 30, the World Health Organization (WHO) designated Covid-19 an international public health emergency and urged all countries to work together to avoid its fast spread (Ali *et al.,* 2020). Health care providers are at danger of infection (Chang *et al.,* 2020). It is critical to safeguard healthcare practitioners, ensure healthcare continuity, and avoid illness spread to others (Chang *et al.,* 2020).

In the State of Palestine, (84) cases and one death were reported in March 2019. Through the first three weeks, community transmission was limited, at the time the original reported cases of the outbreak were (37), the newer wave of cases is primarily imported, and some community transmission is occurred after it. COVID-19 had caused over 13 million confirmed illnesses and killed at least 580,000 people globally as of July 17th, 2020. Cases are predicted to skyrocket in the following months (WHO, 2020b). in Palestine, 8616 COVID-19-infected patients have been confirmed, with 52 individuals dying as a result of the virus (WHO, 2020c).

2. Background and Literature Review

COVID-19 is a disease caused by a new coronavirus, which has not been previously identified in humans. In most cases, COVID-19 causes mild symptoms including dry cough, tiredness and fever, though fever may not be a symptom for some older people. Other mild symptoms include aches and pains, nasal congestion, runny nose, sore throat or diarrhea. Some people become infected but don't develop any symptoms and don't feel unwell. Most people recover from the disease without needing special treatment. Around 1 out of every 6 people who get COVID-19 becomes seriously ill and has difficulty breathing.

The WHO (2021a) ICTV announced “severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)” as the name of the new virus on 11 February 2020, this virus genetically related to coronavirus responsible for the SARS outbreak in 2003. Besides, this disease can be transmitted from person to person through small droplets from the nose or mouth, which are spread when the person sneeze or cough (WHO, 2021b).

Also, it can be spread by touching the contaminated surfaces or objects. Laboratory data suggests that infected people appear to be most infectious just before they develop symptoms (namely 2 days before they develop symptoms) and early in their illness. People who develop severe disease can be infectious for longer.

Older people, smoker and people with pre-existing medical diseases (diabetes, heart disease, lung diseases) are at risk for developing serious illness.

Protocols used in this pandemic are: social distancing at least one meter away from others, wearing a mask and gloves, avoid crowded places and poor ventilated areas, frequent hand washing with water and soap, and the most important one is to get vaccinated. (WHO, 2021c) Most people have mild to moderate symptoms (WHO, 2020a), but also some people develop serious complications,

Pneumonia, organ failure, heart problems, acute kidney injury (AKI), blood clotting problems, and lung failure.

Total active cases of covid-19 worldwide are over 318 million cases, and the total deaths are 5.527.145 (WHO, 2022).

The first case in the middle east was at the United Arab Emirates (UAE) in the late January 2020. 17.605.099 is the total active cases in the Middle East. Tell Dec.31 317.892 deaths recorded in the Middle East. (WHO, 2021d) In the State of Palestine 443.817 cases recorded, total active cases now are 4.362 and total deaths are 4.738 person.

MOH (2021) emphasized that getting vaccinated against COVID-19 helps protect people from getting sick or severely ill with COVID-19 and can also help protect the people around them. (CDC, 2022) So, vaccine is the available preventive method now, in addition, COVID-19 vaccination might offer better protection than getting sick with COVID-19.

A recent study showed that unvaccinated people who already had COVID-19 are more than twice as likely as fully vaccinated people to get reinfected with COVID-19.

The CDC recommends a third dose (additional dose) of an mRNA COVID-19 vaccine for some people with weakened immune systems, such as those who have had an organ transplant, because they may not develop enough immunity after 2 doses of the vaccine. (CDC, 2020) and it's given after 28 days after the second dose.

To sum up, number of vaccinated people in the State of Palestine 1.555.036, and people with additional dose (3 doses) are 181.780 person. And the total number of vaccinated people 3.151.449 (West bank, and Gaza Strip) (MOH, 2021).

Several studies focused on the knowledge, attitude and practice of different populations toward Covid-19, among these studies the following. The study of (Cordina *et al.,* 2021) investigated attitudes and variables influencing attitudes toward the COVID-19 vaccination among persons living in Malta, and ii) determine the reasons why people are hesitant or unwilling to take the vaccine. The study results showed that in Study 1, a total of 2,529 people took part, and in Study 2, 834 people took part. Respondents in both studies were predominantly female with a tertiary education. Males were more inclined to receive the vaccination, whereas females were less willing. Significant others' opinions—family and friends and health experts were related to desire to receive the vaccination, and the major reason given for refusal to receive the vaccination was a lack of vaccine safety.

Islam *et al. (*2021) carried out a study to assess people's current level of knowledge about the likely COVID-19 vaccine, to gain knowledge about respondents' preferences for this vaccine, and to learn regarding people's expectations and apprehensions about the features of this prospective COVID-19 vaccine in India's capital city. Data was collected from 513 people spanning diverse occupational strata using both offline and online interview methods. Data on sociodemographic variables, vaccination acceptability, and concerns about the COVID-19 vaccine were obtained. The study results showed that 79.5 percent of those polled indicated they would receive the vaccination, 8.8 percent said they would not, and 11.7 percent stated they had not yet made up their minds. More than half of those polled were ready to pay for the vaccine, and 72 percent said it should be delivered first to health workers and high-risk groups. Danabal *et al.* (2021) carried out a study for better understand views concerning COVID 19 vaccinations and reluctance to adopt them among urban and rural groups in Tamil Nadu, India. Researchers conducted a community-based cross-sectional study in urban and rural communities, recruiting 564 people who had not yet been vaccinated using multistage random sampling. The vaccine attitude scale (VAX) was used to assess attitudes toward

vaccines, and responses to a direct question were used to assess vaccine acceptance. The study results showed that more than half of those polled had favorable attitudes toward the COVID 19 vaccines, and older people with a greater level of education and employment were more likely to be in cluster four, which had a high level of faith in vaccinations. However, youth, women, rural inhabitants, and low-income laborers were the most skeptical about immunizations.

The study of Omar & Hani (2021) identify negative attitudes and intentions toward COVID-19 vaccines, as well as predictors of these attitudes and intentions. This was a cross-sectional poll that targeted 1011 Egyptians aged 18 and above from 24 governorates between the 7th of January and the 30th of March 2021. The results showed that participants' mean age was 29.35 10.78 years, and 16.6 percent of them had COVID-19. COVID-19 vaccine reluctance was expressed by 54% of respondents, and vaccination non-acceptance was recorded by 21% of participants, whereas Pfizer vaccine was favored by 27% of participants. (51.8 percent) of respondents indicated serious concerns about the vaccine's unanticipated side effects, which were connected with younger age groups, marriage, females, no history of food or medication allergies, perceived sensitivity to COVID 19, and never having had flu vaccination. The observed high level of concern about unanticipated effects of COVID-19 vaccines and widespread vaccine hesitancy among Egyptians, as well as its predictors, should be taken into account when implementing public health intervention campaigns to change negative attitudes and improve acceptance and uptake of COVID-19 vaccines in Egypt.

The purpose of Tahir *et al.* (2021) study was to determine the Pakistani population's attitudes and preferences towards the Coronavirus disease 2019 (COVID-19) vaccine. A cross-sectional survey was conducted using an online self-administered questionnaire. The survey was completed by 883 persons. The questionnaire asked about the participants' socio-demographic characteristics, attitudes, opinions about the COVID-19 vaccine, and their acceptance and rejection of

immunization, as well as their reasons for doing so. The study results showed that the majority of respondents (70.8 percent) said they would accept the COVID-19 vaccine if it were available, and 66.8 percent said they were in favor of immunization. Monthly household income, educational level, self-diagnosis of COVID-19 or a friend, family member, or coworker are all important factors affecting COVID-19 vaccine uptake.

Moreover, the study of (Kishore *et al.,* 2021) aimed to determine the proportion of adults in India who are willing to get vaccinated against COVID-19 based on their perceptions and attitudes regarding immunization against COVID-19. A cross-sectional research was undertaken. Data were obtained online via web-based linkages from individuals aged 18 and above in India using a self-administered and semi-structured questionnaire. The minimal sample size was established by taking the proportion of willingness to receive the immunization as 50%, the confidence interval as 95%, and the alpha error as 5%—the resultant sample size was 384. During the research period, however, 467 people completed the survey. SPSS version 21 was used to analyze the data. The study results showed that a total of 467 people answered, with 329 (70.44 percent) eager to get vaccinated and 138 (29.55 percent) apprehensive to get vaccinated against COVID-19. Only 49.4 percent believed that the vaccination could protect individuals; 63.1 percent were willing to get their children vaccinated; and 59.31 percent agreed that the vaccine should be free for everybody.

Al-Marshoudi *et al.* (2021) analyzed vaccination knowledge, acceptability, and awareness in Oman's society about the COVID-19 vaccine by conducting a nationwide knowledge, attitudes, and practice (KAP) survey. The study method was based on quantitative cross-sectional design, a KAP questionnaire was used to collect data from (3000) randomly selected participants who answered a standardized telephone questionnaire. The study results showed that males were more eager to get vaccinated than Omani. The history of chronic disease, the source of vaccination knowledge, and the degree of education all influenced the desire to receive the vaccine. The willingness of the

Omani community to take the COVID-19 vaccination can be increased by using social media and community influencers to raise knowledge about the vaccine's safety and efficacy.

According to the study of (Alawneh *et al.,* 2021) which carried out to assess the knowledge and attitudes of patients and their companions in North Palestine hospitals regarding seasonal influenza and influenza vaccination, as well as factors influencing vaccine uptake, in order to identify gaps in their knowledge and provide feedback to health authorities for future quality improvement projects by increasing awareness of its effectiveness and safety. The study method was based on a quantitative, cross-sectional 17-item survey of (327) North Palestinian patients and their companions in North Palestinian hospitals was conducted. The study results showed that a total of 327 completed surveys were received, with a 92 percent response rate. Of them, 129 (39.4 percent) thought influenza was the same as a typical cold, and the influenza vaccination was familiar to the vast majority of participants (85.3 percent). Although nearly half of them (53.6 percent) thought the influenza vaccine was safe, only 112 (34.7 percent) thought vaccination was an effective way of preventing significant influenza-related problems, and only 89 (27.2 percent) had previously been vaccinated.

Furthermore, the study of (Ahmed *et al.,* 2021) assess health professionals' knowledge and attitudes concerning the second COVID-19 vaccination dosage in Ethiopian public hospitals. The study method was based on a quantitative, cross-sectional design conducted from January to March 2021 to analyze health professionals working in Ethiopian public health institutions' knowledge and attitudes concerning the second COVID-19 vaccination dosage. The study results showed that four hundred and nine study volunteers took part, with a 96.7 percent response rate. More than half of the respondents in this survey had a good level of understanding about second COVID-19 vaccination doses. Similarly, 95.6 percent of responders were in support of second COVID-19 vaccination doses. Knowledge of second COVID-19 vaccination doses was connected with

educational status, age, and career. Educational status, age, career, job experience, marital status, risk degree, and gender were all characteristics that influenced people's attitudes regarding the second COVID-19 vaccination dosage.

The study of (Ren *et al.,* 2021) look at mental patients' perspectives toward COVID-19 vaccination and potential factors that could impact their decision-making process. The study indicated that participants were more likely to join the COVID-9 vaccination program if the individuals they knew (community residents or their friends and family) had high vaccine coverage. Participants were also more willing to embrace vaccination if the epidemic resurfaced. Furthermore, individuals who considered that vaccination was an important approach to combat the COVID-19 pandemic were more likely to obtain it. The safety of the vaccination was the biggest worry of individuals who did not want to get immunized, either for themselves or a psychiatric family member (71.3 percent).

In another study, (Schwarzinger *et al.,* 2021) investigate the impact of vaccine features, herd immunity information, and general practitioner (GP) advice on vaccination hesitancy in a typical working-age population in France. The study results showed that survey responses were received from 1942 working-age people, 560 (28.8%) of whom chose not to be vaccinated in all eight tasks (outright vaccine rejection), while 1382 (71.2%) did not. According to the study model, both outright vaccine rejection and vaccine hesitation were strongly linked with female gender, age, lower educational level, previous poor compliance with recommended immunizations, and no disclosure of defined chronic diseases. Outright vaccine refusal was associated with a lower perceived severity of COVID-19, whereas vaccine hesitancy was lower when herd immunity benefits were communicated, as well as in working versus non-working individuals and those with COVID-19 experience.

Finally, Borriello *et al.* (2020) look into the vaccination qualities that are most important to Australians and to look into the possible uptake of a COVID-19 vaccine in Australia. Preferences for a COVID-19 vaccination among 2136 inhabitants of Australia's states and territory were gathered and analyzed using a latent class model in a stated preference experiment. The findings indicate that preferences for mild adverse cases, route of administration, place of administration, price, and efficacy vary. In contrast, respondents' preferences for immediacy and severe responses are uniform, with respondents preferring a shorter wait time for the vaccination and fewer occurrences of severe side effects. The projected adoption of the vaccine is assessed using three alternative scenarios, with an average value of 86 percent attained. Individual preferences are used to determine willingness to pay for immediacy, efficacy, moderate and severe side effects.

To sum up, scholars have just begun to attend to the conceptualization of preferences and attitudes towards COVID-19 Vaccination in normal societies. However, far less attention has been devoted to the empirical test of such assumptions, especially in the Palestinian occupied society which remains unclear. The current study is considered one of the leading studies that deal with preferences and attitudes towards COVID-19 Vaccination in the Palestinian occupied society. It is expected to add a new scientific knowledge regarding preferences and attitudes towards COVID-19 Vaccination in conflicted societies

3. Statement of the Problem

In spite of the low number of cases, WHO has identified the situation in the State of Palestine with a very high risk, in relative to the insufficient medical resources in the country in comparison to other countries. The mortality rate of COVID-19 raises radically due to the lack of relevant resources. The Government of Palestine followed a proactive evidence-based approach of confinement and suppression to limit community transmission in order to prevent the uncontrollable

spread of the virus and its related resulted health system challenges (Palestinian Authority, 2020). According to KAP theories (De Monde, 2011; Tachfouti *et al.,* 2012; Kolade & Atakiti, 2017), adherence to mandatory preventive measures is critical in slowing the spread of the virus, but it is also dependent on the population's overall knowledge, attitudes, and awareness.

The purpose of this study is to perform a cross-sectional study among Palestinians to measure their preferences and attitudes toward COVID-19 vaccination.

4. Significance

Studies undertaken during the 2003 SARS outbreak reveal that knowledge, attitudes, and behaviors concerning viruses are connected with emotions in communities, which can hinder efforts to restrict the virus's transmission (Wu, 2009; Pearson, 2004). In order to develop successful COVID-19 management policies, health professionals must have the tools they need to assess the public's awareness of, and attitude toward, the illness and its vaccination.

5. Objectives

The study seeks to achieve the following objectives:

1. Exploring the Palestinian preferences and attitudes toward Covid-19 Vaccination.
2. Addressing the preferences and attitudes indicators of Palestinians toward Covid-19 Vaccination.
3. Exploring the demography breakdown over Palestinian preferences and attitudes toward Covid-19 Vaccination.

6. Questions

The present study seeks to answer the following questions:

1. What are the preferences and attitudes of Palestinians in toward Covid-19 Vaccination?
2. What are the preferences and attitudes indicators of Palestinians toward Covid-19 Vaccination?
3. Are there statistically significant differences in the Palestinian preferences and attitudes toward Covid-19 Vaccination according to the demographic data (gender, age, marital status, place of residency, qualification, work status, religious commitment, and corona virus infection)?

7. Hypotheses

Taking into consideration, the set objectives, questions and variables of the study, the study addresses the main hypotheses:

1. There are no statistically significant differences at $\alpha \leq 0.05$ in the Palestinian preferences and attitudes toward Covid-19 Vaccination according to gender, work status, corona virus infection, marital status, place of residency, and qualification.
2. There is no statistically significant correlation at $\alpha \leq 0.05$ between age, religious commitment and Palestinian preferences and attitudes toward Covid-19 Vaccination.

8. Definition of terms

1. Preferences: the probability of occurrence of one of two or more concurrently available responses, usually expressed as either a relative frequency (compared to the frequency of all the measured responses) or a ratio. (APA, 2020a)

2. Attitudes: a relatively enduring and general evaluation of an object, person, group, issue, or concept on a dimension ranging from negative to positive. Or a summary evaluations of

target objects and are often assumed to be derived from specific beliefs, emotions, and past behaviors associated with those objects. (APA, 2020b)

3. Covid-19: is an infectious disease caused by the SARS-CoV-2 virus. (WHO, 2020a). A new, severe, acute respiratory coronavirus infection (Wang *et al.,* 2020).

4. Vaccination: is a simple, safe, and effective way of protecting humans against harmful diseases, before they come into contact with them. It uses body's natural defenses to build resistance to specific infections and makes the immune system stronger.

5. Palestinians: the target population of the study who are vaccinated over 15 years of age at Hebron and Bethlehem Governorates, West Bank.

9. Limitations

The population of the present study was limited to Palestinians at Hebron and Bethlehem Governorates, West Bank, during 2021.

10. Methods And Design

10.1 Approach

The study uses a quantitative approach, using a questionnaire, which is appropriate to the exploratory nature of the research.

10.2 Population And Sampling

The target population consists of Palestinians over fifteen years of age at Hebron and Bethlehem Governorates, in the West Bank during 2021, which includes 552855 persons; the population is comprised of 281425 males and 271430 females, as indicated in table no. 1 (Palestinian Central Bureau of Statistics, 2022).

Three hundred eighty-four Palestinians over fifteen years of age were stratifiedly selected, based on gender and region. The sample population consists of Palestinians living in both Hebron and Bethlehem Governorates at the time of the survey. The sample size was calculated using the sampling web of http://www.surveysystem.com/sscalc.htm, sample size calculator, with a margin error of 0.05.

10.3 Instrumentation

The index of a 25-item scale was used to measure Palestinian preferences and attitudes towards COVID-19 vaccination, that was developed by the research team. A 5-point Likert scale (strongly agree, agree, neutral, disagree and strongly disagree) was used to measure responses. The survey was conducted through face-to-face interviews in Hebron and Bethlehem Governorates, in the West Bank. The sampling survey instrument sought background information about participants' which included gender, age, marital status, place of residency, qualification, work status, religious commitment, and corona virus infection.

10.3.1 Instrument Validity

Validation of the instrument proceeded in two distinct phases. The initial phase involved a group of referees and expert arbitrators (N=5), who provided some comments on the tool. The second phase involved the implementation of a pilot study (N=20) to validate the survey using exploratory factor analysis. Factor loading for all items exceeded 0.60 (0.61 to 0.78), which means that those items are suitable in measuring every item of Palestinian preferences and attitudes towards COVID-19 vaccination, as indicated in table no. 10.

10.3.2 Instrument Reliability

The reliability was tested using Cronbach's Alpha and Guttman Split-Half Coefficients to ascertain reliability and consistency of the survey. Cronbach's Alpha and Guttman Split-Half for the survey instrument was 0.84 and 0.83, respectively, indicating very good reliability and consistency, as indicated in table no. 11.

11.3 Sample Socio-demographic Characteristics

The demographic breakdown of the participants was based on gender, age, marital status, place of residency, qualification, work status, religious commitment, and corona virus infection. In total, three hundred eighty-four Palestinians were conducted. Respondents were between 15 and 67 years of age (M 28.94, SD 10.89). Males represented 50.8% of the participants, while the remaining 49.2% were females; 47.7% were singles compared to 47.1% from married participants. Nearly (43%) of the participants lived in rural areas, 35.9% lived in urban areas, while the remaining 21.1% were from refugee camps; and the majority (56.8%) were working. Almost 67% of the participants were well-educated (Diploma or above), who were high religiously committed (42.2%) compared to 46.1% from moderate religiously committed. Only (36.7%) have had the corona virus, while the remaining 63.3% didn't have the corona virus, as indicated in tables' no. 2-9.

11.4 Data Analysis

The questionnaire items were rated on a 1–5 Likert scale (1=strongly disagree to 5=strongly agree), the highest score indicates a high preferences and attitudes towards COVID-19 vaccination. Descriptive statistics gauged level of preferences and attitudes towards COVID-19 vaccination among the sampled population.

Additionally, the following statistical techniques were measured: Regression, T test, One-way analysis of variance, Tukey test, Cronbach's Alpha, Guttman Split-Half Coefficient and Factor Analysis using SPSS.

12. Findings

12.1 Palestinian Preferences And Attitudes Towards Covid-19 Vaccination

The mean score of preferences and attitudes towards COVID-19 vaccination scale as reported by the sample of three hundred eighty-four participants was moderate (M 3.23, SD 0.50). More than half of the participants (64.6%) scored a moderate preferences and attitudes towards COVID-19 vaccination, as indicated in table no. 12.

12.2 Palestinian Preferences And Attitudes Indicators Towards Covid-19 Vaccination

Furthermore, findings revealed the indicators of preferences and attitudes towards COVID-19 vaccination ranked in a descending order as follows, “It is necessary to inform citizens of the importance of Covid-19 vaccination” (M 3.85, SD 1.04); “The vaccination against Covid-19 virus should be approached carefully” (M 3.79, SD 1.01). “Covid-19 vaccination is a national duty” (M 3.73, SD 1.16); “Covid-19 vaccination is better than nothing” (M 3.66, SD 1.02), and “Covid-19 vaccination is the responsibility of every citizen” (M 3.63, SD 1.07).

Additionally, Palestinians indicated they will not hesitate in taking the available Covid-19 vaccines (M 3.57, SD 1.14); they encourage their families and friends to get the Covid-19 vaccination (M 3.54, SD 1.18); and they give the needed attention to the topic of Covid-19 vaccination (M 3.54, SD 0.99); believing that Covid-19 vaccination is an urgent demand (M 3.46, SD 1.13); although some people behave illogically when addressing Covid-19 vaccination (M 3.45, SD 1.05), as indicated in table no. 13.

12.3 Differences In Palestinian Preferences And Attitudes Indicators Towards Covid-19 Vaccination According To Demographic Breakdown

Furthermore, the study explored the demographic breakdown over Palestinian preferences and attitudes towards COVID-19 vaccination with the aim of identifying any differences. Findings showed that gender, place of residency, qualification, and religious commitment do not show any significant differences, as indicated in tables' no. 14, 20-24. However, it was found that work status, corona virus infection, marital status, and age were significant variables, as indicated in tables' no. 15-19, 24.

In relation to work status, the differences were in favor of working participants (M 3.34, SD 0.46) compared to (M 3.08, SD 0.51) for non-working participants: T-test value was (5.138, P=0.000), as indicated in table no. 15. As for the corona virus infection, the differences were in favor of the infected participants (M 3.33, SD 0.46) compared to (M 3.17, SD 0.51) for uninfected participants, T.test value was (3.018, P=0.003), as indicated in tables no. 16.

Regarding marital status, the differences favored the married participants (M 3.30, SD 0.50) compared to (M 3.18, SD 0.51) for single participants, F-value was (3.225, P=0.041), as indicated in tables' no. 17-19.

Finally, findings indicated that there is a statistically significant positive correlation between age and Palestinian preferences and attitudes towards COVID-19 vaccination, Beta-value was (0.201, P=0.000), as indicated in table no. 24.

13. Discussion

The purpose of this study is to perform a cross-sectional study among Palestinians to measure preferences and attitudes toward COVID-19 vaccination. Our findings highlight the need of

investigating the preferences and attitudes toward COVID-19 among Palestinians living in the West Bank. Some of our results agreed and disagreed with previous studies, those can be described as followed:

In this study results, the mean score of preferences and attitudes towards COVID-19 vaccination scale was moderate for (64.6%) of the study sample, this result disagreed with the results of (Tahir et al., 2021) where the study found that (70.8%) of the participants will accept the Covid-19 vaccination and (66.8%) showed positive attitude toward Covid-19 vaccination.

The study of (Cordina *et al.,* 2021) which found that More over half of those polled said they were willing to receive the vaccination and the vaccine reluctance was prevalent in the study population, with 32.6 percent doubtful and 15.6 percent refusing to receive the vaccine, this agreed with our result where Palestinians indicated they will not hesitate in taking the available Covid-19 vaccines. Our findings revealed the indicators of preferences and attitudes towards Covid-19 vaccination ranked mainly, "It is necessary to inform citizens of the importance of Covid-19 vaccination"; "The vaccination against Covid-19 virus should be approached carefully", this result agrees with the result of (Cordina *et al.,* 2021) which found that the major reason given for refusal to receive the vaccination was a lack of vaccine safety. The following factors predicted desire to take the vaccination: The belief that the COVID-19 vaccine will safeguard the health of those who take it; value of health experts' recommendations on the effectiveness of the COVID-19 vaccine.

Furthermore, the study explored the demographic breakdown over Palestinian preferences and attitudes towards COVID-19 vaccination with the aim of identifying any differences. Findings showed that gender, place of residency, qualification, and religious commitment do not show any significant differences. However, it was found that work status, marital status, and age were significant variables. This result disagrees with the study of (Tahir *et al.,* 2021) results where the

study found out that monthly household income and educational level are important factors affecting COVID-19 vaccine uptake. Except for corona virus infection the results of this study agreed with (Tahir *et al.,* 2021) which found out that self-diagnosis of COVID-19 or a friend, family member, or coworker is an important factor affecting COVID-19 vaccine uptake. Our result related to the gender disagrees with the result of (Cordina *et al.,* 2021) which found that gender is significant to the willing to receive Covid-19 vaccine, while educational background has no significance, while age has a significant impact.

14. Conclusion And Recommendations

In conclusion, this study revealed that there is a moderate attitude and preferences toward Covid-19 vaccination among Palestinians, they will not hesitate in taking the available Covid-19 vaccines and they will encourage their families and friends to get the Covid-19 vaccination. This study also indicated that gender, place of residency, qualification, and religious commitment do not show any significant differences, while work status, corona virus infection, marital status, and age were significant variables. It is recommended to provide COVID-19 immunization awareness campaigns to enhance the Palestinian population attitudes and preferences toward Covid-19 through emphasizing the vaccine's safety and providing comfort. Further research is needed on the topic with longitudinal study design to cover the limitations of this cross-sectional study design.

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16. Appendixes

Table no. (1). Distribution of the study population and sample by governorate and gender

Governorate	Gender	Population	Sample
Hebron	Males	210823	146
	Females	203036	141
Bethlehem	Males	70602	49
	Females	68394	48
Total		552855	384

Table no. (2). Sample distribution by gender

Gender	N	Percent %
Male	195	50.8
Female	189	49.2
Total	384	100

Table no. (3). Sample distribution by marital status

Marital status	N	Percent %
Single	183	47.7
Married	181	47.1
Other	20	5.2
Total	384	100

Table no. (4). Sample distribution by place of residency

Place of residency	N	Percent %
City	138	35.9
Village	165	43.0
Camp	81	21.1
Total	384	100

Table no. (5). Sample distribution by qualification

Qualification	N	Percent %
Basic or below	29	7.6
Secondary	98	25.5
Diploma	49	12.8
Bachelor or above	208	54.2
Total	384	100

Table no. (6). Sample distribution by work status

Work status	N	Percent %
Working	218	56.8
Not Working	166	43.2
Total	384	100

Table no. (7). Sample distribution by religious commitment

Religious commitment	N	Percent %
High	162	42.2
Moderate	177	46.1
Low	45	11.7
Total	384	100

Table no. (8). Sample distribution by corona virus infection

Corona virus infection	N	Percent %
Yes	141	36.7
No	243	63.3
Total	384	100

Table no. (9). Sample distribution by age

Variable	N	Min.	Max.	Mean	Std. Deviation
Age	371	15	67	28.94	10.89

Missing=13

Table no. (10). Factor analysis of Palestinian preferences and attitudes towards COVID-19 vaccination scale

No.	Items	Extraction
1.	Covid-19 vaccination is a national duty	0.71
2.	I think that the available Covid-19 vaccines are safe	0.68
3.	I will not hesitate in taking the available Covid-19 vaccines	0.70

4.	I encourage my family and friends to get the Covid-19 vaccination	0.67
5.	It is difficult to eradicate the Covid-19 without vaccination	0.78
6.	Covid-19 vaccination is better than nothing	0.62
7.	I believe that Covid-19 vaccination protects against the risk of infection	0.64
8.	I think I'm fortified to corona virus	0.68
9.	I think that the available Covid-19 vaccines in the Palestinian society are useless	0.65
10.	Covid-19 vaccination is an urgent demand	0.62
11.	I have a clear idea about Covid-19 vaccination	0.69
12.	I feel comfortable after receiving the Covid-19 vaccination	0.63
13.	I like to read about Covid-19 vaccination	0.61
14.	It is necessary to inform citizens of the importance of Covid-19 vaccination	0.61
15.	The vaccination against Covid-19 virus should be approached carefully	0.67
16.	It is enough to adhere to preventive measures instead of being vaccinated against Covid-19	0.62
17.	I give the needed attention to the topic of Covid-19 vaccination	0.62
18.	Covid-19 vaccination is the responsibility of every citizen	0.68
19.	Everyone who does not receive the Covid-19 vaccination must be held accountable	0.63
20.	Not receiving Covid-19 vaccination by some people cannot be justified	0.62
21.	I am looking forward to receive the second dose of Covid-19 vaccination	0.61
22.	The fear toward receiving Covid-19 vaccination is exaggerated	0.70
23.	I regret for taking Covid-19 vaccination	0.64
24.	Some people behave illogically when addressing Covid-19 vaccination	0.67
25.	If time return, I will not receive the vaccination of Covid-19	0.68

Table no. (11). Reliability of Palestinian preferences and attitudes towards COVID-19 vaccination scale

Model	No. of items	Alpha
Cronbach's Alpha	25	0.84
Guttman Split-Half	25	0.83

Table no. (12). Number, mean, standard deviation, and percentage of Palestinian preferences and attitudes total score towards COVID-19 vaccination

Variable	N	Mean*	Std. Deviation	Percent %
Preferences and attitudes towards COVID-19 vaccination total score	384	3.23	0.50	64.6

***Mean out of 5 points.**

Table no. (13). Mean scores, standard deviation, and percentage for the indicators of preferences and attitudes towards COVID-19 vaccination ranked in a descending order

Preferences and attitudes towards COVID-19 vaccination indicators	Mean*	Std. Deviation	Percent %
It is necessary to inform citizens of the importance of Covid-19 vaccination	3.85	1.04	77.0
The vaccination against Covid-19 virus should be approached carefully	3.79	1.01	75.8
Covid-19 vaccination is a national duty	3.73	1.16	74.6
Covid-19 vaccination is better than nothing	3.66	1.02	73.2
Covid-19 vaccination is the responsibility of every citizen	3.63	1.07	72.6
I will not hesitate in taking the available Covid-19 vaccines	3.57	1.14	71.4
I encourage my family and friends to get the Covid-19 vaccination	3.54	1.18	70.8
I give the needed attention to the topic of Covid-19 vaccination	3.54	0.99	70.8
Covid-19 vaccination is an urgent demand	3.46	1.13	69.2
Some people behave illogically when addressing Covid-19 vaccination	3.45	1.05	69.0

It is difficult to eradicate the Covid-19 without vaccination	3.43	1.06	68.6
I have a clear idea about Covid-19 vaccination	3.41	0.98	68.2
I like to read about Covid-19 vaccination	3.38	1.13	67.6
The fear toward receiving Covid-19 vaccination is exaggerated	3.34	1.11	66.8
I think that the available Covid-19 vaccines are safe	3.25	1.09	65.0
I believe that Covid-19 vaccination protects against the risk of infection	3.23	1.18	64.6
I feel comfortable after receiving the Covid-19 vaccination	3.21	1.18	64.2
Not receiving Covid-19 vaccination by some people cannot be justified	3.09	1.12	61.8
I am looking forward to receive the second dose of Covid-19 vaccination	2.99	1.24	59.8
It is enough to adhere to preventive measures instead of being vaccinated against Covid-19	2.98	1.12	59.6
I think I'm fortified to corona virus	2.85	1.15	57.0
I think that the available Covid-19 vaccines in the Palestinian society are useless	2.84	1.08	56.8
Everyone who does not receive the Covid-19 vaccination must be held accountable	2.84	1.21	56.8
If time return, I will not receive the vaccination of Covid-19	2.76	1.25	55.2
I regret for taking Covid-19 vaccination	2.71	1.22	54.2
Total	3.23	0.50	64.6

***Mean out of 5 points.**

Table no. (14). T-test for the differences in Palestinian preferences and attitudes towards COVID-19 vaccination scores according to gender

Gender	N	Mean*	Std. Deviation	Df	T-value	Sig.
Male	195	3.22	0.52	382	-0.458	0.647
Female	189	3.24	0.48			
Total	384	3.23	0.50			

***Mean out of 5 points.**

Table no. (15). T-test for the differences in Palestinian preferences and attitudes towards COVID-19 vaccination scores according to work status

Work status	N	Mean*	Std. Deviation	DF	T-value	Sig.
Working	218	3.34	0.46	382	5.138	0.000
Not working	166	3.08	0.51			
Total	384	3.23	0.50			

***Mean out of 5 points.**

Table no. (16). T-test for the differences in Palestinian preferences and attitudes towards COVID-19 vaccination scores according to corona virus infection

Covid-19 infection	N	Mean*	Std. Deviation	DF	T-value	Sig.
Yes	141	3.33	0.46	382	3.018	0.003
No	243	3.17	0.51			
Total	384	3.23	0.50			

***Mean out of 5 points.**

Table no. (17). One-way analysis of variance for the differences in Palestinian preferences and attitudes towards COVID-19 vaccination scores according to marital status

Source	Df	Sum of squares	Mean square	F-value	Sig.
Between groups	2	1.629	0.814	3.225	0.041
Within groups	381	96.200	0.252		
Total	383	97.829	-----		

Table no. (18). Tukey test for the source of differences in Palestinian preferences and attitudes towards COVID-19 vaccination scores according to marital status

Marital status	Single	Married	Other
Single		-0.11368*	0.09798
Married			0.21166
Other			

Table no. (19). Mean scores and standard deviation for the differences in Palestinian preferences and attitudes towards COVID-19 vaccination scores according to marital status

Marital status	N	Mean*	Std. Deviation
Single	183	3.18	0.51
Married	181	3.30	0.50
Other	20	3.09	0.44
Total	384	3.23	0.50

***Mean out of 5 points.**

Table no. (20). One-way analysis of variance for the differences in Palestinian preferences and attitudes towards COVID-19 vaccination scores according to place of residency

Source	Df	Sum of squares	Mean square	F-value	Sig.
Between groups	2	0.561	0.280	1.098	0.335
Within groups	381	97.268	0.255		
Total	383	97.829	-----		

Table no. (21). Mean scores and standard deviation for the differences in Palestinian preferences and attitudes towards COVID-19 vaccination scores according to place of residency

Place of residency	N	Mean*	Std. Deviation
City	138	3.28	0.49
Village	165	3.19	0.49
Camp	81	3.24	0.54

Total	384	3.23	0.50

***Mean out of 5 points.**

Table no. (22). One-way analysis of variance for the differences in Palestinian preferences and attitudes towards COVID-19 vaccination scores according to qualification

Source	Df	Sum of squares	Mean square	F-value	Sig.
Between groups	3	0.086	0.029	0.112	0.953
Within groups	380	97.742	0.257		
Total	383	97.829	-----		

Table no. (23). Mean scores and standard deviation for the differences in Palestinian preferences and attitudes towards COVID-19 vaccination scores according to qualification

Qualification	N	Mean*	Std. Deviation
Basic or below	29	3.20	0.30
Secondary	98	3.22	0.51
Diploma	49	3.21	0.46
Bachelor or above	208	3.24	0.53
Total	384	3.23	0.50

***Mean out of 5 points.**

Table no. (24). Regression coefficients between age, religious commitment and Palestinian preferences and attitudes towards COVID-19 vaccination

Variables	N	Beta	Sig.
Age	371	0.201	0.000
Religious commitment	383	0.001	0.981

R Square=0.040

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